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AUTHOR Hawkins, J. David; Herrenkohl, Todd I.; Farrington, David P.; Brewer, Devon; Catalano, Richard F.; Harachi, Tracy W.; Cothorn, Lynn

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ABSTRACT

This Bulletin describes the strength and duration of changeable risk and protective factors for youth violence at points in youth development when they appear most salient. These predictors are potential targets for prevention and intervention. The quantitative results of a large number of studies were synthesized using meta-analysis procedures. The 66 studies all involved juveniles living in the community. The factors identified are grouped into these headings: (1) individual medical and physical factors; (2) individual psychological factors; (3) family factors; (4) school factors; (5) peer-related factors; (6) community and neighborhood factors; and (7) situational factors. Multiple predictors and the strength of prediction are also discussed. Among the school factors explored are academic failure, low bonding to school, truancy and dropping out of school, frequent school transitions, and a school with a high delinquency rate. (Contains 63 references.) (SLD)



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John J. Wilson, Acting Administrator

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JUVENILE JUSTICE BULLETIN

Predictors of Youth Violence

J. David Hawkins, Todd I. Herrenkohl, David P. Farrington, Devon Brewer, Richard F. Catalano, Tracy W. Harachi, and Lynn Cothern

Identifying and addressing the predictors of youth violence at appropriate points in youth development is important for prevention. Unfortunately, there have been few high-quality longitudinal studies of the predictors of youth violence. The Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Study Group on Serious and Violent Juvenile Offenders (Study Group) brought 22 researchers together for 2 years to analyze current research on risk and protective factors and the development of serious and violent juvenile offending careers.

Together, data from the long-term studies that have identified predictors of youth violence can help determine violence prevention policy and practice. This Bulletin describes the strength and duration of changeable risk and protective factors for youth violence at points in youth development when they appear most salient. These predictors are potential targets for prevention and intervention. If risk factors can be decreased and protective factors enhanced by preventive action, then the likelihood of violence should be reduced.

Study Sample

The quantitative results of a large number of studies were synthesized using meta-

analysis procedures. The 66 studies examined here were drawn from Lipsey and Derzon's bibliography (1998) and supplemented by research reports provided by OJJDP Study Group members and analyses of the Seattle Social Development Project longitudinal data set. The studies selected for this review met the following six criteria:

- ◆ Subjects were juveniles living in their community (i.e., they were not incarcerated) when they were first assessed.
- ◆ Subjects were not chosen for having committed prior criminal or violent offenses.
- ◆ Studies measured interpersonal physical violence or acts resulting in physical injury or threat of physical injury to another person, excluding suicidal behavior.
- ◆ Studies identified a modifiable indicator of a meaningful predictor or risk factor. Studies of interactions between multiple risk factors were excluded, as were discussions of race and gender, as predictors of violence.
- ◆ The study design was longitudinal, with results based on prospective or retrospective data so that exposure to risk factors preceded violence.

From the Administrator

If we could confidently predict which youth would be prone to commit violent acts and at which stage in their development such delinquency was most likely to erupt, it would significantly strengthen our efforts to prevent juvenile violence.

Accordingly, the Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Study Group on Serious and Violent Juvenile Offenders devoted 2 years to analyzing the research on risk and protective factors for serious and violent juvenile offending, including predictors of juvenile violence derived from the findings of long-term studies.

This Bulletin describes a number of such risk and protective factors, including individual, family, school, peer-related, community/neighborhood, and situational factors.

Although we need additional research on juvenile violence, the information this Bulletin provides will enhance our understanding of the predictors of youth violence. I would also call your attention to the Study Group Report and to the Bulletin summarizing it, both of which may be obtained from OJJDP's Juvenile Justice Clearinghouse.

John J. Wilson
Acting Administrator

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- ◆ Individual subjects served as the unit of analysis for both independent and dependent variables.

Methodology

A statistical analysis was performed to determine the strength of the association between particular risk factors and the violence incurred. To account for the fact that each study used different methods, this relationship was expressed as a correlation coefficient, which was arrived at using standard meta-analytical procedures (Rosenthal, 1991). The findings from two or more studies were summarized as a weighted mean correlation, which gives more weight to studies with large samples than to studies with small samples.

The strength of the association between a risk factor and subsequent violence can also be expressed as an odds ratio (the odds of violence in the group with a particular risk factor divided by the odds of violence in the group without that risk factor). An odds ratio expresses the degree of increased risk for violence associated with the presence of a risk factor in a population. For example, an odds ratio of 2 indicates a doubling of risk. This Bulletin provides odds ratios for predictors when they were given or could be compiled from the information provided in a study.

Results

Predictors are arranged in five domains: individual, family, school, peer-related, and community and neighborhood factors. The following malleable predictors of violence are discussed in more detail below.

◆ Individual factors:

- ◆ Pregnancy and delivery complications.
- ◆ Low resting heart rate.
- ◆ Internalizing disorders.
- ◆ Hyperactivity, concentration problems, restlessness, and risk taking.
- ◆ Aggressiveness.
- ◆ Early initiation of violent behavior.
- ◆ Involvement in other forms of antisocial behavior.
- ◆ Beliefs and attitudes favorable to deviant or antisocial behavior.

◆ Family factors:

- ◆ Parental criminality.
- ◆ Child maltreatment.
- ◆ Poor family management practices.
- ◆ Low levels of parental involvement.
- ◆ Poor family bonding and family conflict.
- ◆ Parental attitudes favorable to substance use and violence.
- ◆ Parent-child separation.

◆ School factors:

- ◆ Academic failure.
- ◆ Low bonding to school.
- ◆ Truancy and dropping out of school.
- ◆ Frequent school transitions.

◆ Peer-related factors:

- ◆ Delinquent siblings.
- ◆ Delinquent peers.
- ◆ Gang membership.

◆ Community and neighborhood factors:

- ◆ Poverty.
- ◆ Community disorganization.
- ◆ Availability of drugs and firearms.
- ◆ Neighborhood adults involved in crime.
- ◆ Exposure to violence and racial prejudice.

Individual Medical and Physical Factors

Pregnancy and delivery complications. Prenatal and delivery trauma are somewhat predictive of later violence, although findings vary with the research methods used.

Kandel and Mednick (1991) found that 80 percent of violent offenders scored high in delivery complications, compared with 30 percent of property offenders and 47 percent of nonoffenders. However, other studies have not found an association between pregnancy and delivery complications and violence (Denno, 1990; Farrington, 1997). Mednick and Kandel found in an earlier study (1988) that a stable home environment served as a protective factor against prenatal trauma.

Low resting heart rate. This predictor is thought to indicate a fearless temperament or underarousal, which may predispose an individual to aggression and violence (Raine and Jones, 1987). Research indicates that a low resting pulse rate is a weak predictor of violent crime (Farrington, 1998; Wadsworth, 1976).

The evidence currently does not warrant using either of these predictors—pregnancy and delivery complications or low resting heart rate—to identify youth at risk for violent behavior. More research is needed on these factors and their possible effects on violence.

Individual Psychological Factors

Internalizing disorders (nervousness/withdrawal, worrying, and anxiety). This category of psychological characteristics has a slight negative correlation with (Mitchell and Rosa, 1979), or is unrelated to, later violence (Farrington, 1989).

Hyperactivity, concentration problems, restlessness, and risk taking. Evidence from studies in this meta-analysis consistently suggests a correlation between these problems and later violent behavior.

In a longitudinal study in Sweden, 15 percent of boys with both restlessness and concentration difficulties at age 13 were arrested for violence by age 26. Boys with restlessness and concentration difficulties were five times more likely to be arrested for violence than boys without these characteristics (Klinterberg et al., 1993).

In another study, Farrington (1989) found that teacher ratings of male children's concentration problems and restlessness—including difficulty sitting still, the tendency to fidget, and frequent talkativeness—predicted later violence. Concentration problems also predicted academic difficulties, which predict later violence. Multivariate models are needed to understand the pathways leading to violent behavior.

Aggressiveness. Aggressive behavior measured from ages 6 to 13 consistently predicts later violence among males. Many researchers have noted the continuity in antisocial behavior from early aggression to violent crime (Loeber,



1990, 1996; Loeber and Hay, 1996; Olweus, 1979). A study in Orebro, Sweden, found that two-thirds of boys with high teacher-rated aggression scores at ages 10 and 13 had criminal records for violent offenses by age 26. They were more than six times more likely than boys who were not rated aggressive to be violent offenders (Stattin and Magnusson, 1989).

In a sample of African American boys in the Woodlawn area of Chicago, IL, nearly half of the 6-year-old boys who had been rated aggressive by teachers were arrested for violent crimes by age 33, compared with one-third of their nonaggressive counterparts (McCord and Ensminger, 1995). This relationship also held for males in hyperactive samples (Loney, Kramer, and Milich, 1983).

Research results for females are less consistent. McCord and Ensminger (1995) found similar results for males and females; however, Stattin and Magnusson (1989) did not find a relationship between early female aggression and later violent offenses.

Early initiation of violent behavior.

Research has shown that early onset of violence and delinquency is associated with more serious and chronic violence (Farrington, 1991; Piper, 1985; Thornberry, Huizinga, and Loeber, 1995; Tolan and Thomas, 1995). Farrington (1995) found that one-half of boys adjudicated delinquent for a violent offense between age 10 and age 16 were convicted of a violent crime by age 24, compared with only 8 percent of juveniles between age 10 and age

16 not adjudicated delinquent for a violent crime as juveniles.

Involvement in other forms of antisocial behavior. Involvement in antisocial behaviors, including stealing and destruction of property (Mitchell and Rosa, 1979); self-reported delinquency, smoking, and early sexual intercourse (Farrington, 1989); and drug selling (Maguin et al., 1995), is associated with a greater risk of violence among males. Robins (1966) found a similar pattern among male psychiatric patients but did not find similar patterns for females.

Beliefs and attitudes favorable to deviant or antisocial behavior. Dishonesty, antisocial beliefs and attitudes, attitudes favorable to violence, and hostility toward police have been found to predict later violence among males. Relationships between these predictors and violence are less consistent for females (Williams, 1994). Prevention programs that help youth develop positive beliefs and standards so that they can reject violence, cheating, and rule breaking may reduce the risk for violence.

Family Factors

Parental criminality. Baker and Mednick (1984) found that men ages 18–23 with criminal fathers were 3.8 times more likely to have committed violent criminal acts than those with noncriminal fathers. Farrington (1989) also found that boys who had a parent arrested before their 10th birthday were 2.2 times more likely

to commit violent crimes than those with noncriminal parents.

In contrast, Moffitt (1987) found that adults (ages 29–52) with criminal parents were not much more likely to be arrested for a violent offense than those with noncriminal parents. Further research is necessary to understand the contribution of parental criminality to child behavior.

The relationship between parental alcoholism and mental illness and children's violent behavior has been examined. McCord (1979) did not find a link between fathers' alcoholism and criminal conduct and their sons' later violence. In a study of male adoptees, Moffitt (1987) found a small and inconsistent relationship between parental mental illness and violence in children.

Child maltreatment. Studies have examined three forms of child maltreatment: physical abuse, sexual abuse, and neglect. Evidence suggests that children who have been physically abused or neglected are more likely than others to commit violent crimes later in life (Widom, 1989; Zingraff et al., 1993; Smith and Thornberry, 1995).

Poor family management practices. Family management practices such as failure to set clear expectations for children's behavior, poor monitoring and supervision, and severe and inconsistent discipline consistently predict later delinquency and substance abuse (Capaldi and Patterson, 1996; Hawkins, Arthur, and Catalano, 1995). In a sample followed up on after 20 years, the McCords found that parents' poor supervision and aggressive discipline predicted their children's convictions for person crimes well into their forties (McCord, McCord, and Zola, 1959; McCord, 1979).

Wells and Rankin (1988) found that boys with very strict parents reported the most violence. Boys with very permissive parents reported the second highest level of violence. Boys with parents who were neither too strict nor too lax reported the least violence. Also, boys whose parents punished them inconsistently, sometimes punishing and sometimes ignoring the same behavior, were more likely to commit an offense against other persons than boys whose parents punished them more consistently. Parental punitiveness or harshness in discipline also predicted later violence.

Farrington (1989) found that poor child-rearing; an authoritarian parenting style; poor parental supervision; harsh parental discipline; a cruel, passive, or neglectful parenting attitude; and parental disagreement about childrearing each predicted later violence. Maguin and colleagues (1995) found that poor family management practices when boys were ages 14–16 predicted self-reported violence by age 18, although poor family management practices when boys were age 10 did not predict violence at age 18. An analysis of a subsample of the Seattle Social Development Project data found that proactive family management practices at age 14 reduced the likelihood of self-reported violence at age 16 for African American and Caucasian males and females (Williams, 1994).

Low levels of parental involvement.

Strong parental involvement can function as a protective factor against violence. Conversely, a lack of parental interaction and involvement with children may increase children's future risk for violence. Williams (1994) found that parent-child communication and involvement at age 14 predicted less self-reported violent behavior at age 16. This relationship was weaker for females than for males. Similarly, Farrington (1989) found that sons whose fathers did not engage in leisure activities with them more often exhibited violent behavior as teenagers and adults and were more likely to be convicted for a violent offense.

Poor family bonding and conflict. Few studies have looked specifically at the relationship between family bonding and violent behavior. Some research has shown a nonsignificant relationship between poor family bonding and violence (Williams, 1994; Elliott, 1994). Studies investigating this link should distinguish between bonding to prosocial versus antisocial or criminal family members (Foshee and Bauman, 1992).

Exposure to high levels of marital and family conflict also appears to increase the risk of later violence (Farrington, 1989; McCord, 1979; Maguin et al., 1995; Elliott, 1994).

Parental attitudes favorable to substance use and violence. Research indicates that parental attitudes favorable to behaviors such as alcohol use predict use of alcohol and drugs by youth (Peterson et al., 1994),

but little research has examined the impact of parental attitudes to violence on children's behavior. One study showed that children who at age 10 had parents who were tolerant of violent behavior were more likely to report violent behavior by age 18 (Maguin et al., 1995).

Residential mobility. Little research has focused on the effect of a family's mobility on youth violence. Maguin and colleagues (1995) found that the number of changes in residence in the past year, assessed when boys were age 16, predicted self-reported violent behavior by 18. Residential mobility assessed when boys were age 14, however, did not significantly predict violence at age 18. This discrepancy may indicate that residential moves have short-term effects on behavior, but more research is needed to understand the relationship.

Parent-child separation. Evidence indicates that disruptions of parent-child relationships predict later violent behavior in children. Parent-child separation before age 10 has been found to predict violence (Farrington, 1989; Wadsworth, 1978). Henry and colleagues (1996) found that having a single-parent family when boys were age 13 predicted their convictions for violence by age 18. An association also has been found between leaving home at an early age and high levels

of violence in both men and women (McCord and Ensminger, 1995). However, many other factors that also predict violence can contribute to parent-child separations. Multivariate studies are needed to understand the interactions among these factors.

School Factors

Various aspects of school-related experiences, such as low educational achievement, low interest in education, dropping out of school, truancy, and poor-quality schools, have been hypothesized to contribute to criminal and violent behavior (Hawkins, Farrington, and Catalano, 1998).

Academic failure. Poor academic achievement has consistently predicted later delinquency (Maguin and Loeber, 1996; Denno, 1990). Academic failure in the elementary grades also increases risk for later violent behavior (Farrington, 1989; Maguin et al., 1995). The relationship between poor academic achievement and later violence has been found to be stronger for females than for males.

Low bonding to school. Research generally supports the hypothesis that bonding to school is a protective factor against crime (Catalano and Hawkins, 1996; Hirschi, 1969). Williams (1994) found that school bonding was a stronger protective factor against violence in African American students and in boys and was less linked to violence in Caucasian students and in girls. Maguin and colleagues (1995) found that low commitment to school and low educational aspirations at age 10 did not predict later violence, but at ages 14 and 16 these factors increased the risk for violence. Other researchers have reported that lack of school bonding was not a significant predictor of serious and violent offending (Elliott, 1994; Mitchell and Rosa, 1979).

Truancy and dropping out of school. Farrington (1989) found that youth with high truancy rates at ages 12–14 were more likely to engage in violence as adolescents and adults; leaving school before the age of 15 also predicted later violence. Truancy and dropping out may be indicators of low school bonding, but children also may miss school or leave school early for other reasons (Janosz et al., 1996).



Frequent school transitions. Maguin and colleagues (1995) found that youth who had changed schools often in the past year at ages 14 and 16 were more violent at age 18 than those who had not. Conclusions must be drawn carefully, however, because school transitions can be related to other factors that predict violence.

High delinquency rate school. Farrington (1989) found that boys who at age 11 attended schools with high delinquency rates reported more violent behavior than other youth.

Peer-Related Factors

Delinquent siblings. Farrington (1989) found that having delinquent siblings by age 10 predicted later convictions for violence. Maguin and colleagues (1995) found that the association between having delinquent siblings and being convicted for violence was stronger when sibling delinquency occurred closer in time to the violent youth's offense and later in that youth's development, indicating that antisocial siblings have a stronger negative influence during their sibling's adolescence than earlier in the child's development. Williams (1994) found that the influence of delinquent siblings was stronger on girls than on boys.

Delinquent peers. Delinquent peers also may have a greater influence on later violence during an individual's adolescence than they do earlier in development (Moffitt, 1993). Research has shown that adolescents whose peers disapproved of delinquent behavior were less likely to report having committed delinquent acts (Elliott, 1994), including sexual assaults (Ageton, 1983).

Gang membership. Battin and colleagues (1998) showed that being a gang member contributes more to delinquency than does having delinquent peers.

Community and Neighborhood Factors

Community factors, including poverty, low neighborhood attachment and community disorganization, the availability of drugs and firearms, exposure to violence and racial prejudice, laws and norms favorable to violence, and frequent media portrayals of violence,



may contribute to crime and violence (Brewer et al., 1995).

Poverty. Being raised in poverty has been found to contribute to a greater likelihood of involvement in crime and violence (Sampson and Lauritsen, 1994). Self-reported felony assault and robbery have been found to be twice as common among youth living in poverty as among middle-class youth (Elliott, Huizinga, and Menard, 1989). Low family income predicted self-reported teen violence and convictions for violent offenses in several studies (Farrington, 1989; Wikström, 1985; Hogg and Wolf, 1983; Henry et al., 1996).

Community disorganization. Maguin and colleagues (1995) examined community disorganization and low neighborhood attachment as predictors of violence. Community disorganization (that is, the presence of crime, drug-selling, gangs, and poor housing) was a better predictor of violence than low attachment to a neighborhood.

Availability of drugs and firearms. In one study, a prevalence of drugs and firearms in the community predicted greater variety in violent behaviors at age 18 (Maguin et al., 1995).

Neighborhood adults involved in crime. Maguin and colleagues (1995) found that children who knew many adult criminals were more likely to engage in violent behavior by age 18. More longitudinal studies investigating the influence of this factor on youth violence are needed.

Exposure to violence and racial prejudice.

Exposure to violence in the home and elsewhere increases a child's risk for involvement in violent behavior later in life (Paschall, 1996). McCord and Ensminger (1995) also found that African American study participants who reported having experienced racial discrimination committed more violent acts.

Situational Factors

Situational factors are the circumstances that surround a violent event and influence the outcome of that event. These factors may be predictors of violent behavior and may include the presence of a weapon, consumption of alcohol or other drugs by the offender or victim, the behavior of bystanders, the motives of the offender, the relationship of the offender to the victim, and the behavior of the victim (Sampson and Lauritsen, 1994; Farrington and Loeber, 1999). However, the contribution of these factors is difficult to assess because data have not been collected from other situations with similar characteristics in which violence did not occur. Longitudinal studies to investigate these situational triggers are needed.

Multiple Predictors and Strength of Prediction

In the Seattle Social Development Project, Herrenkohl and colleagues (in press) investigated the power of diverse factors seen at ages 10, 14, and 16 to predict violent behavior by the age of 18. More

Predictors of Violent or Serious Delinquency by Age Group: A Comparative Ranking¹

Introduction

Researchers Mark W. Lipsey and James H. Derzon (1998) examined predictors of violent or serious delinquency in adolescence and early adulthood. Applying the procedures used for a meta-analysis, Lipsey and Derzon compiled information from published and unpublished research into a database that indexed the strength of the relationship between the predictor variable and the criterion variable in terms of effect sizes. Through a statistical analysis, the relative strength of different types of predictor variables was measured at different ages, and procedures were used to control for methodological differences between studies. The first goal was to determine which predictors seen at adolescence had the strongest empirical associations with subsequent violence or delinquency. The second goal was to identify which of those associations were of sufficient magnitude to help identify at-risk juveniles to receive intervention.

Results

The table on page 7 lists the predictors of violent or serious delinquency at ages 6–11 and ages 12–14 in the order of significance determined by the statistical analysis and in groups based on estimated aggregated effect size.

The most interesting comparisons follow:

- ◆ The best predictors of violent or serious delinquency differ according to age group. A juvenile offense at ages 6–11 is the strongest predictor of subsequent violent or serious delinquency even if the offense did not involve violence. For the 12–14 age group, a juvenile offense is the second most powerful predictor of future violence. Substance abuse is among the best predictors of future violence for children ages 6–11 but one of the poorest predictors for children ages 12–14.
- ◆ The two strongest predictors of subsequent violence for the 12–14 age group—the lack of social ties and

involvement with antisocial peers—have to do with interpersonal relations. The same predictors, however, are relatively weak for the 6–11 age group.

- ◆ Relatively fixed personal characteristics are the second- and third-rank predictors of subsequent violence for the 6–11 age group. The ages 12–14 group has a heavier representation of behavioral predictors of subsequent violence (i.e., general offenses, aggression, and school performance).
- ◆ Broken homes and abusive parents are among the poorest predictors of subsequent violence for both age groups.
- ◆ The significance of antisocial peers and substance abuse is reversed in the two age groups. Whereas having antisocial peers is a strong predictor for the age 12–14 group, it is a weak predictor for the age 6–11 group.

Implications for Intervention

For an intervention to be effective, the targeted risk factors must be amenable to change. The strongest predictors of subsequent violence for both age groups are relatively malleable factors. Because they are cumulative, the second rank of variables for the 6–11 age group, the effects of antisocial parents and socioeconomic status, may not be very amenable to change—and gender is not subject to change. The predictors in the first, second, and third rank (except for male gender) for juveniles ages 12–14 are malleable.

Because many of the strongest predictors of subsequent violence can be changed, they offer possible targets for successful intervention. This suggests that disrupting early patterns of antisocial behavior and negative peer support is a promising strategy for the prevention of violence and serious delinquency.

For more information about the meta-analysis discussed here, please see Lipsey and Derzon, 1998.

continued on next page

¹ This sidebar is based on "Predictors of Violent or Serious Delinquency in Adolescence and Early Adulthood," by M.W. Lipsey and J.H. Derzon, in *Serious and Violent Juvenile Offenders: Risk Factors and Successful Interventions*, edited by Rolf Loeber and David P. Farrington (Sage Publications, Inc., 1998).

than 17 percent of youth committed a violent act by age 18, and 80 percent of them were expected to do so based on significant predictors seen at age 10. Eighty-four percent were expected to do so based on the significant predictors seen at age 16. The results of the Seattle project are described below for each domain—individual, family, school, peers, and community and neighborhood (Herrenkohl et al., in press).

◆ Individual:

- ❖ Hyperactivity or attention deficits at age 10, 14, or 16 doubled the risk of violent behavior at age 18.
- ❖ Sensation seeking and involvement in drug selling at ages 14 and 16 more than tripled the risk of involvement in violence.

◆ Family:

- ❖ Parental attitudes favorable to violence when subjects were age 10

more than doubled the risk that subjects would engage in violence at age 18.

- ❖ Poor family management practices and family conflict when subjects were age 10 were not significant predictors of later violence. However, poor family management practices when subjects were age 14 doubled the risk for later involvement in violence.

Table: Ranking of Ages 6–11 and Ages 12–14 Predictors of Violent or Serious Delinquency at Ages 15–25

Predictors at Ages 6–11	Predictors at Ages 12–14
Rank 1 Group	
General offenses (.38)	Social ties (.39)
Substance use (.30)	Antisocial peers (.37)
Rank 2 Group	
Gender (male) (.26)	General offenses (.26)
Family socioeconomic status (.24)	
Antisocial parents (.23)	
Rank 3 Group	
Aggression (.21)	Aggression (.19)
Ethnicity (.20)	School attitude/performance (.19)
	Psychological condition (.19)
	Parent-child relations (.19)
	Gender (male) (.19)
	Physical violence (.18)
Rank 4 Group	
Psychological condition (.15)	Antisocial parents (.16)
Parent-child relations (.15)	Person crimes (.14)
Social ties (.15)	Problem behavior (.12)
Problem behavior (.13)	IQ (.11)
School attitude/performance (.13)	
Medical/physical characteristics (.13)	
IQ (.12)	
Other family characteristics (.12)	
Rank 5 Group	
Broken home (.09)	Broken home (.10)
Abusive parents (.07)	Family socioeconomic status (.10)
Antisocial peers (.04)	Abusive parents (.09)
	Other family characteristics (.08)
	Substance abuse (.06)
	Ethnicity (.04)

Note: The value in parentheses is the mean correlation between the predictor and the outcome, adjusted to equate the source studies on relevant methodological features.

- ❖ Parental criminality when subjects were age 14 (not assessed at age 10) more than doubled the risk for involvement in violence at age 18.
- ❖ When subjects were age 16, parental criminality, poor family management, family conflict, and residential mobility at least doubled the risk for involvement in violence at age 18.

◆ **School:**

- ❖ Low academic performance at ages 10, 14, and 16 predicted an increased risk for involvement in violence at age 18.
- ❖ Behavior problems at school (as rated by teachers) when subjects were age 10 significantly predicted involvement in violence at age 18.

- ❖ Low commitment to schooling, low educational aspirations, and multiple school transitions at ages 14 and 16 predicted a significantly increased risk for involvement in violence at age 18.

◆ **Peers:**

- ❖ Having delinquent friends at ages 10, 14, and 16 predicted an increased risk for later involvement in violence.
- ❖ Gang membership at age 14 more than tripled the risk for involvement in violence at age 18.
- ❖ Gang membership when subjects were age 16 more than quadrupled the risk for involvement in violence at age 18.

◆ **Community and neighborhood:**

- ❖ Community disorganization, the availability of drugs, and knowing adults involved in criminal activities at ages 14 and 16 all were associated with an increased risk for later involvement in violence.

Conclusion

More research needs to be done on youth violence, including studies that contrast violent offenders and nonviolent offenders/nonoffenders. Research is also required to better understand the protective factors that mitigate the effects of risk exposure. Many predictors of violent behavior are predictors of other problems, such as substance abuse, delinquency, school dropout, and teen pregnancy (Dryfoos, 1991; Hawkins, Catalano, and Miller, 1992). The risk of violence is also compounded by the number of risk factors involved. The Cambridge Study in Delinquent Development (Farrington, 1997) found that the percentage of youth convicted for violent crimes increased from only 3 percent for those with no risk factors to 31 percent for those with four risk factors (low family income, large family size, low nonverbal IQ at ages 8–19, and poor parental childrearing behavior).

The larger the number of risk factors to which an individual is exposed, the greater the probability that the individual will engage in violent behavior. Multicomponent interventions targeting identification of shared predictors and

constellations of risk factors may be more effective in preventing violence than those that target single risk factors.

For more information about this meta-analysis, the studies that were examined, and the procedures that were used, see Hawkins et al., 1998.

For Further Information

The following publications are available from the Juvenile Justice Clearinghouse (JJC). For more information or to order a copy, contact JJC, 800-638-8736 (phone), 301-519-5600 (fax), puborder@ncjrs.org (e-mail), www.ojjdp.ncjrs.org (Internet).

◆ **Summary of Study Group's Final Report.** To help communities and practitioners learn more about serious and violent juvenile offenders, OJJDP released a Bulletin that summarizes the Study Group's final report. The 8-page Bulletin, *Serious and Violent Juvenile Offenders* (May 1998), is available (free of charge) from JJC.

◆ **Final Study Group Report.** The Study Group's final report, *Never Too Early, Never Too Late: Risk Factors and Successful Interventions for Serious and Violent Juvenile Offenders* (Loeber and Farrington, 1997), is also available (for a fee) from JJC.

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OJJDP Study Group

In 1995, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) convened a Study Group on Serious and Violent Juvenile Offenders, a distinguished panel brought together to build a research base for policymakers and practitioners who deal with juveniles who engage in serious and violent conduct. The group, chaired by Drs. Rolf Loeber and David P. Farrington, included 22 leading juvenile justice and criminology scholars selected on the basis of their expert knowledge of different aspects of serious and violent juvenile (SVJ) offending. The OJJDP Study Group documented existing information about SVJ offenders, examined programs for SVJ offenders, evaluated the programs' performance, and recommended further research and evaluation efforts needed to prevent and control SVJ offending.

The Study Group's final report, *Never Too Early, Never Too Late: Risk Factors and Successful Interventions for Serious and Violent Juvenile Offenders*, was completed in 1997 under grant number 95-JD-FX-0018. The conclusions of the Study Group were subsequently set forth in a volume entitled *Serious and Violent Juvenile Offenders: Risk Factors and Successful Interventions*, edited by the Study Group's coauthors, Rolf Loeber and David P. Farrington, and published by Sage Publications, Inc., in 1998.

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Study Group Members

David M. Altschuler, Ph.D., The Johns Hopkins University, Baltimore, MD.

Alfred Blumstein, Ph.D., Carnegie Mellon University, Pittsburgh, PA.

Richard F. Catalano, Ph.D., University of Washington, Seattle.

Julius Debro, Ph.D., University of Washington, Seattle.

David P. Farrington, Ph.D., University of Cambridge, England.

Peter Greenwood, The RAND Corporation, Santa Monica, CA.

Nancy G. Guerra, Ph.D., University of Illinois at Chicago.

Darnell F. Hawkins, Ph.D., University of Illinois at Chicago.

J. David Hawkins, Ph.D., University of Washington, Seattle.

James C. Howell, Ph.D., Institute for Intergovernmental Research, Tallahassee, FL.

David Huizinga, Ph.D., University of Colorado, Boulder.

Barry Krisberg, Ph.D., National Council on Crime and Delinquency, San Francisco, CA.

John H. Laub, Ph.D., Northeastern University, Boston, MA.

Marc LeBlanc, Ph.D., University of Montreal, Quebec, Canada.

Mark W. Lipsey, Ph.D., Vanderbilt University, Nashville, TN.

Rolf Loeber, Ph.D., University of Pittsburgh, PA.

Walter B. Miller, Ph.D., Cambridge, MA.

Mark H. Moore, Ph.D., Harvard University, Cambridge, MA.

Howard N. Snyder, Ph.D., National Center for Juvenile Justice, Pittsburgh, PA.

Terence P. Thornberry, Ph.D., University at Albany, State University of New York.

Patrick H. Tolan, Ph.D., University of Illinois at Chicago.

Gail A. Wasserman, Ph.D., Columbia University, New York, NY.

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Acknowledgments

J. David Hawkins, Ph.D., is Director of the Social Development Research Group and Professor of Social Work at the University of Washington, Seattle, and a founder of Developmental Research and Programs.

Todd I. Herrenkohl, Ph.D., is a Research Analyst with the Social Development Research Group and Assistant Professor of Social Work at the University of Washington, Seattle.

David P. Farrington, Ph.D., is Professor of Psychological Criminology at the Institute of Criminology, University of Cambridge, England.

Devon Brewer, Ph.D., is a Research Scientist with the Alcohol and Drug Abuse Institute at the University of Washington, Seattle.

Richard F. Catalano, Ph.D., is Associate Director of the Social Development Research Group and Professor of Social Work at the University of Washington, Seattle, and a founder of Developmental Research and Programs.

Tracy W. Harachi, Ph.D., is a Research Associate Professor with the Social Development Research Group in the School of Social Work at the University of Washington, Seattle.

Lynn Cothorn, Ph.D., is a Senior Writer/Editor for the Juvenile Justice Resource Center in Rockville, MD.

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